Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Inquiry Concerning the Deployment of	)	
Advanced Telecommunications	)	CC Docket No. 98-146
Capability to All Americans in a Reasonable	)	
and Timely Fashion, and Possible Steps	)	
to Accelerate Such Deployment	)	
Pursuant to Section 706 of the	)	
Telecommunications Act	)	

COMMENTS OF PSINET INC.

I. INTRODUCTION AND SUMMARY

PSINet Inc., by its attorneys, files these comments in response to the Commission's Notice of Inquiry in the above-captioned proceeding [hereafter "the NOI"]. PSINet was the first commercial Internet service company, and continues to be a leading provider of Internet services and Internet access in the United States and abroad. PSINet is "not [a] traditional telecommunications firm[]." NOI, ¶ 12. Indeed, it is the leading independent Internet backbone provider in the U.S.,[1] as it is not controlled by any other provider or telecommunications carrier.

PSINet's network today includes more than 230 points of presence ("PoPs") in the U.S. and more than 400 PoPs worldwide, each designed and built specifically to handle Internet-based traffic from customers that employ a range of access methods. PSINet engineers and executives

have developed many of the most significant technical and product innovations in the Internet's history, and are at the forefront of broadband Internet backbone investment and development. PSINet is also actively exploring satellite and wireless delivery mechanisms for broadband delivery in rural and other underserved areas. For these reasons, PSINet has a major stake in the deployment of high-quality, high-speed broadband telecommunications capability through all levels of the network.

These comments focus on three issues raised by the NOI: first, the statutory definition of "advanced telecommunications capability" (¶¶ 13-17); second, deployment and state of competition in the Internet backbone market (¶¶ 25-26, 82); and third, the more general question of how the Commission can best fulfill the mandate of Section 706.

Consistent with the innovative, pro-competitive and technology-neutral purposes of the section, the Commission must interpret "advanced telecommunications capability" in a way that stimulates high-quality innovation (rather than raw bandwidth that does not perform as advertised), and that does not advantage a particular set of incumbents or a particular technology.

Second, the Commission should reject as unfounded the bald claims of several RBOCs that there is a "shortage of backbone facilities." As PSINet's own deployment plans help to

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! Ten percent of the world's Internet traffic is carried across PSINet's network.

illustrate, this characterization of the "problem" in deployment of high-quality broadband turns the reality of advanced telecommunications capacity on its head.[2]

Finally, in crafting policy under Section 706, the NOI appropriately looks to the robust competition and enormous innovation of the Internet as a model of what Section 706 should achieve. Commission policy should do its utmost to preserve the competitive environment that has paved the way for the next waves of innovation in two-way communications capacity and services.

II. "ADVANCED TELECOMMUNICATIONS CAPABILITY" SHOULD BE INTERPRETED AS HIGH-PERFORMANCE, HIGH-SPEED, DUPLEX TECHNOLOGY

Section 706 is a statute designed to empower the Commission and State Public Utility Commissions to spur innovation in high-performance, high speed, two-way services. The definition of the key statutory term, "advanced telecommunications capability" requires such an interpretation.

In crafting this definition, Congress made an explicit choice to require that such capability "enable[] users *to originate and* to receive *high-quality* voice, data, graphics, and video *telecommunications*." See 47 U.S.C. § 706(c)(1) (emphases added). Furthermore, the definition of § 706(c)(1) requires that the capability be both "high-speed" and "broadband."

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2 See attached PSINet deployment maps.

Congress' use of these terms has several significant implications. First, by making clear that users must be able "to originate," as well as to receive high-speed, high-quality "telecommunications," the statute strongly suggests that advanced telecommunications capabilities should be fully duplex. In other words, they must provide the same quality of performance for end users who originate communications upstream as for content providers who send communications downstream. This approach is far more consonant with both democratic values and with the current technological structure of the Internet, which has created what the Supreme Court has termed "the vast democratic fora of the Internet." ACLU v. Reno, 117 S. Ct. 2329, 2344 (1997).

Second, Congress' use of the terms "high-speed," "broadband," and "high-quality" also requires that "advanced telecommunications capability" actually perform at a very high performance level. Based on its extensive experience designing and operating high-speed, high-performance networks, PSINet cautions the Commission not to equate the statutory definition simply with through-put speed. For example, some high-speed technologies permit communications over such short distances as to be of questionable value when actually deployed -- especially for rural and other high-cost areas. Furthermore, with inadequate network architecture (e.g., an absence of dedicated circuits), high-speed network segments often fail to deliver high-performance. Therefore, the Commission should refrain from defining "advanced telecommunications capability" in relation to a specific level of nominal network speed.

The NOI appropriately seeks comment on a wide variety of technologies that hold promise as a means of providing advanced telecommunications capabilities. In particular, the Commission should be extremely wary of adopting a definition of this term or tailoring a

forbearance program to fit deployment of a particular technology. Such a decision would be contrary to the statute, which explicitly requires the Commission to accelerate deployment of advanced capability by "promoting competition," § 706(b), and which defines advanced capability in an explicitly technology-neutral manner. § 706(c)(1). Tailoring Section 706 relief to a particular technology would constitute picking technological "winners and losers," and would be particularly inadvisable when dominant carriers have already filed tariffs to deploy the technology in question. Regulatory forbearance from enforcing important safeguards should not be undertaken to encourage deployment of lesser technologies that incumbents are already in the course of deploying regardless of FCC regulation.

Finally, with regard to the Commission's question (NOI at ¶17) as to the timing of actions undertaken under §§ 706(a) and (b), PSINet submits that § 706(a) is a general provision, whereas § 706(b) provides for a study, followed by Commission action. Any Commission action under this Section would benefit from, and should follow, the conclusions of this study. Furthermore, with regard to the specific actions set forth in subsection (b) -- "removing barriers to infrastructure investment" and "promoting competition in the telecommunications market" -- the more specific language of that subsection likely requires that actions by the Commission in these areas occur after the starting point for action set forth in that provision.

III. THERE IS NO SHORTAGE OF HIGH-SPEED INTERNET BACKBONE CAPABILITY.

The NOI (at ¶ 33) requests information regarding the construction plans of backbone providers. PSINet is pleased to respond to Commission's request by submitting the attached maps which set forth PSINet's current and planned backbone deployment, covering much of the

United States. (See Exhibit 1). Among other major investments in upgrading its network, PSINet particularly directs the Commission's attention to the fiber-based OC 48 IRU that it acquired earlier this year from IXC Communications, valued at approximately $240 million. It operates at the equivalent of 2.4 billion bits per second This deployment far exceeds the standard for advanced capability discussed above in terms of both network speed and network performance. Furthermore, the route will carry traffic from PSINet PoPs and a variety of rural providers' PoPs in sparsely populated states such as Idaho and Utah.

The NOI also asks whether there is a shortage of Internet backbone generally, whether there is a shortage in rural areas, id. at ¶ 33, and whether "any shortage [is] relatively greater in intraLATA or interLATA routes." Id. at ¶ 25. As a major player and active competitor in the Internet backbone market, PSINet is convinced that no such shortage exists.[3]

The "backbone shortage" claim was first raised by several RBOCs seeking waivers of Section 271 to enter the interLATA market. PSINet presented an extensive rebuttal of the claim in its Reply Comments regarding these Bell Company 706 petitions.[4] Part of this discussion is recapped briefly below:

In contrast to the local exchange market, the Internet backbone market is highly competitive and dynamic. Backbone providers may build high-speed capacity, or acquire or lease it from long distance providers or providers of newer transmission methods. They also increase speed and reliability significantly through means other than raw bandwidth.[5] Unlike the

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3 Indeed, if such a shortage existed, then backbone providers would be able to extract the sort of inflated charges that ILECs have been able to charge for PRI ISDN lines due to their overwhelming market power.

4 See Reply Comments of PSINet, at 2-8.

5 Since effective data transmission over the Internet depends on low packet loss rather than line capability, such issues would not be resolved through additional lines for raw bandwidth;

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local telecommunications market, no Internet provider today enjoys a monopoly on services, so that issues of reliability, speed, and quality of service are key determinants to the survival and success of each provider.

Indeed, the innovation driving much of today's Internet stems from the market imperative for competing providers to develop new and better approaches to enhance speed, reliability, and customer satisfaction. This market-based innovation furthers the highest objectives of Section 706 of the 1996 Act by promoting advanced services through competitive markets.

The rate at which the Internet has brought services to all Americans, including rural Americans, has been an unequivocal success. PSINet and other Internet backbone providers have brought high-speed Internet access to rural America. Several features of PSINet's network advance this goal:

PSINet's Free Peering -- PSINet offers free peering to other ISPs at over 100 PSINet PoPs in the U.S. Because PSINet provides direct connectivity to more than 10% of the traffic on the Internet, this peering allows ISPs and their customers to avoid potentially congested public NAPs. As demonstrated by PSINet's free peering arrangements, rural ISPs may have access to PSINet's backbone-quality services at numerous PSINet PoPs. This policy also belies the suggestion, at ¶ 82 of the NOI, that disputes among Internet backbone members may not be resolved "without involvement by regulators."

PSINet's PoPs -- PSINet maintains more than 230 PoPs in the United States, connected together and to the Internet by T1 and T3 dedicated lines, soon to be augmented by the 10,000 mile OC-48 backbone discussed above. Each PoP is built to a precise, full-service standard that allows the customer to choose its preferred access method: dial-up analog, ISDN, or dedicated

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rather, the causes of Internet congestion are more related to protocol dynamics. Internet performance problems lend themselves better to Internet-specific engineering strategies that are not always emphasized or well-understood in the telephony community.

lines. Thus, each of PSINet's PoPs is built to serve different classes of customers, from the very large, connecting with dedicated lines, to the smaller customers seeking dial-up 56 K analog access.

PSINet's national PoP deployment illustrates how Internet backbone providers are serving smaller communities with high-speed network access points, even if that community may not be able to support a DS3 PoP. As noted above, PSINet is actively exploring satellite and wireless delivery mechanisms as a way for ISPs serving rural and other high-cost areas to connect to PSINet's backbone at high speeds. PSINet emphasizes that it is only one of many Internet backbone providers with regional and national PoPs. The redundancy and flexibility of the network also greatly enhances service quality and reliability.

PSINet's OC-48 Backbone -- PSINet's network, consisting of T1 and T3 lines, will be significantly enhanced with the expanded backbone employing the OC-48 currently being made available to PSINet by IXC Communications. PSINet's expanded backbone has set a new industry standard, currently being copied by at least two other backbone-providing ISPs.

PSINet's DS3 PoPs -- PSINet has deployed PoPs with lines of DS3 speed or greater (and intends to deploy OC-48 PoPs) in numerous locations.

PSINet's Frame Relay Architecture -- In each of PSINet's PoPs, a frame relay switch connects the PoP via a T3 line to the rest of the PSINet network. In this way, PSINet minimizes the number of "hops" across multiple routers.[6] This allows PSINet to deliver the customer data faster, more efficiently, and with fewer dropped packets.

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6 The U S West Petition (at 8-9) inaccurately portrays the Internet as a rigid hierarchical network, in which smaller communities are lowest on the connectivity chain. As demonstrated above, the networks of PSINet and other providers are proof that U S West's portrayal, perhaps an unintended result of its classical telephone network view of the world, is a gross oversimplification. The Internet is anything but a rigid hierarchy.

Furthermore, the Commission's question regarding a possible shortage of backbone capacity on intraLATA routes, NOI at ¶ 25, ignores that backbone deployment is not based upon LATA boundaries. Moreover, PSINet and other Internet backbone providers do not charge customers, including connecting ISPs, on a distance-sensitive basis. The only distance-sensitive costs incurred by rural ISPs are the distance-sensitive rates paid to ILECs for T1, T3, and ISDN PRI lines.

IV. THE NOI APPROPRIATELY LOOKS TO THE INTERNET INDUSTRY AS A MODEL OF INNOVATION FOR DELIVERING ADVANCED CAPABILITIES.

The NOI appropriately looks to the robust competition and enormous innovation of the Internet as a model of what Section 706 should achieve. Id. at ¶¶ 80-83. The highly competitive Internet market exemplifies the conditions for innovation that are the goal of Section 706. Commission policy should do its utmost to preserve the competitive environment that has paved the way for the next waves of innovation in two-way communications capacity and services. Therefore, instead of making advanced telecommunications operate like the local telecommunications market does today (as the RBOC 706 petitions requested), the Commission should endeavor to make the local loop for advanced telecommunications as open and accessible as the Internet is today.

In response to the Commission's core question about the future, it is not realistic in either the near or long-term "to expect companies who have possessed and exercise market power for decades, to behave like the non-network parts of the Internet industry." NOI, at ¶ 82. The same concerns do not apply with regard to companies that lack market power. However, as the Commission suggests in ¶ 38 of the NOI, strong safeguards will be necessary to "ensure that independent ISPs are able to obtain efficient and competitively priced local transport service

from incumbent LECs." Unless they are required to offer underlying telecommunications elements (including modems and conditioned loops) to competing providers, the Bell Companies would monopolize data access, just as they now control the local telephony business.

Section 706(b) directs the Commission to "promot[e] competition in the telecommunications market." as a means of accelerating the deployment of advanced telecommunications capability. This mandate is best achieved by opening up the incumbent LEC network so that competing providers can use it to deploy innovative services. The American consumer is much more likely to benefit "on a reasonable an timely basis" from reasonably priced advanced data services when competing providers can gain access to necessary elements of the Bell Company network at cost-based rates.

Conclusion

For the foregoing reasons, the Commission should: (1) interpret "advanced telecommunications capability" as a high-performance, fully duplex capability, rather than simply on the basis of nominal network speed; (2) conclude that there is not a shortage of Internet backbone capability; and (3) require incumbents with market power to offer unbundled loops conditioned for advanced service to all competing providers, including CLECs and ISPs.

Respectfully submitted,

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Attachment A

DOCUMENT OFF-LINE

This page has been substituted for one of the following:

o An oversize page or document (such as a map) which was too large to be scanned into the RIPS system.

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